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THE EDUCATIONAL ASPECTS
OF
STATE MEDICINE.

BY

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etc. etc.

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The Author designed a paper much shorter than the following, for insertion in the *British Medical Journal*, as the third of a series on the general question; but he found it impossible to condense what he had to say on its educational aspects, within any space which he could reasonably claim of the most generous editor of a weekly periodical.

He therefore submits these remarks, in the first place, for the perusal of his colleagues on the General Medical Council, intending afterwards, if it should seem right, to publish them.

CHELTENHAM, *June* 19, 1868.

EDUCATIONAL ASPECTS OF STATE MEDICINE.

THE necessity for a higher standard of Education and Examination in the Specialities of Public or State Medicine is now, I believe, generally admitted, even by those who may have formed no very definite notion of the manner in which the instruction should be given, the special pursuits followed, and the results of educational work tested.

It is in the hope of aiding the discussion of this question that the following observations are offered by one who has always approached this part of his subject with diffidence, as not having been himself a public teacher or examiner in any branch of science or practice, not even in those, to the administrative relations of which his attention has been long directed.

In the outset, I am ready to admit unreservedly that the elements both of Medical Jurisprudence and of Hygeiology, have been, and are now, taught by accomplished professors in most of our great medical schools and universities, with some success and advantage ; also, that much useful knowledge has been thus acquired by a considerable number of medical students ; and that what they have thus learnt may not in every instance have been wholly forgotten in the struggles, anxieties, and engrossing pursuits of ordinary practice.

But we may be sure that much of this special instruction

is afterwards lost by all who receive it, and almost all of it is lost by the majority. The practical application of such special knowledge is so rarely called for in the ordinary practice of the medical profession, that even those who are gifted with a retentive memory cannot always recall at will the varied and numerous facts, the experimental processes, the complicated phenomena of reported cases, and the rules of forensic practice.

Also, I frankly admit the importance of such considerations as Professor Christison brought to bear on the question at the last session of the Medical Council. The well-educated general practitioner may have acquired such a knowledge of physics, medical chemistry, botany and toxicology, as enables him to act efficiently and usefully in emergencies to which he may be summoned. He may also be more or less conversant with the medico-legal bearings of accidents and injuries. At all events, he may have learned to observe carefully, and record accurately, the facts and symptoms of any organic lesion coming under his professional care, so as to be prepared to make a clear and intelligible report to any special expert, or to give evidence concerning such facts in court. In his prognosis, as a therapist, he may be able to estimate the probable effects of bodily injury upon the future capabilities, physical or mental, of the patient.

But he ought to be afforded no such excuse, as (in the defect of appointed medico-legal officers) he certainly has at present, for straying from his customary path of duty—too often to his own disadvantage, and generally to the discredit of our national system of jurisprudence.

The higher studies of forensic medicine, as they are laid down in the works of our best living authorities, cannot be pursued by the general body of medical students, to the extent and with the minuteness, which are required to form an accomplished Medical Jurist. To qualify a man for

pronouncing, *more magistri*, or in a Court of Law, upon difficult questions of personal capability, whether of body or mind, causation of disease, constitutional liability, expectation of life, moral responsibility, and many other abstruse points, continually raised in civil or criminal cases, needs a far more extensive and profound acquaintance with medical statistics, biology, psychology, and mental pathology in its physiological relations, than could be fairly demanded of every candidate for the licence to practise. Something more than a smattering of the laws of evidence, some trained capacity to estimate the comparative value of conflicting testimony on events and conditions which concern the health or the safety of the individual or the community, seem to be essential for any one who may be selected as the adviser, or reporter, or assessor in these matters. All this may be fairly termed "Forensic Medicine." But the present system of Medical Education supplies no definitely skilled agency, the Medical Register no guiding information, to assist public bodies and legal authorities in making such selection.

By a similar process of observation, we are led to perceive the utter insufficiency of present methods of instruction in sanitary science or public hygiene,—the connexions of which with medico-legal science are intimate, as in practice the subjects are often inseparable. We thus arrive at the inevitable conclusion that the course of education and the standard of examination generally adopted by medical schools and licensing bodies, by no means qualify the ordinary medical man—able and practically useful as he may be—to investigate, as the very rapid advance of analytical and experimental science requires that he should investigate, the nature and influences of external circumstances—physical and social—upon human life and health.

Time may not be lost in a glance at some of the questions which may have to be solved at any time in every locality. The state of the atmosphere at various altitudes and

under different meteorological conditions; its effects upon living structures; its analysis by various methods. The qualities of the waters, issuing from various strata and soils, running or stagnant; their analysis and purification; and the best sources of public supply. The nature of the soil and subsoil; their composition and geological bases; their effects upon air and water at different elevations. All these again, not merely as elements of climate and natural features of topography, but as modified by the presence and progress of human communities. Most of all, the air: as it may be altered by the movements and the density of population; by the presence of animal life; by the aggregation of domestic animals; by vegetation; by agriculture of various kinds; also, by matters in suspension, such as innumerable spores and germs of the minutest forms of organic existence, some probably identical with or convertible into the specific *contagia* of epidemic or endemic diseases; by excretions and exhalations; by products of combustion; by arts, trades, and commercial processes.

Take, again, the class of questions that come under what Mr. Simon calls the "distribution of disease" in localities; the elements and sources of causation existing in the place, in the community, in the individual; the modes of diffusion or propagation in each epidemic; the measures of arrest and prevention.

To notice, with like brevity, another department of hygiene; how necessary is the skill of both the analyst and the physiologist,—first, for the scientific examination of the various articles of food, beverage, condiment, medicine and poison, supplied to a community, or to certain classes of the population,—secondly, for ascertaining their effects upon the vigour, longevity, constitution, and character of the consumers,—and, lastly, for advising in matters of food-production, manufacture, cooking, and preserving; and in the regulation of dietaries for schools and public institutions.

Where is now to be found a distinct class of men, in or out of the medical profession, capable of fulfilling all these requirements?

Referring to yet another branch of sanitary science, the ordinary courses of Medical Education cannot be said to provide for the acquirement of the special knowledge and skill needed for investigating and reporting, satisfactorily, on the morbid effects of various manufactures, trades, and occupations, either upon the several descriptions of work-people in each—women and children especially—or upon the neighbouring population. And, even if they did so provide, the question is forced upon us, whether the ordinary practitioner is ever in the right position to make such inquiries.

On this point, especially, we see how close is the practical connexion existing between preventive and medico-legal duties. The officer who, as Certifying Surgeon, has to decide, after a conscientious and scientific examination, whether the “child” or the “young person” exhibits the physical signs indicating the attainment of the age prescribed by law for each class,* (no easy matter)—whether the individual is free from disease and bodily infirmity of every kind (here arise questions of hereditary liability),—has also to report upon accidents and causes of disease and injury to workers of both sexes and all ages.

The same doubts and mistrusts apply to existing qualifications when we seek for scientific and impartial inquirers into the sites and modes of human habitation; the conditions and surroundings of dwelling-houses; the results of various degrees of aggregation (overcrowding, as it is called) in different localities, whether towns, or streets and blocks of houses, or separate dwellings.

I will not prolong, as I easily might, this sketch of our

* See “Hints to Certifying Surgeons,” by Mr. George Greaves.

educational necessities and deficiencies in public hygiene, with their resulting social difficulties. How can the former be supplied, the latter remedied?

In the first place, as regards Education. It seems to me of primary importance to require further time and larger opportunities for more advanced instruction in all these specialities.

Without staying to consider schemes of instruction and methods of training in Legal Medicine—perhaps the most difficult branch of medical education—without even mentioning such portions of the literature of that department as every student ought to make himself thoroughly acquainted with,—I proceed at once to Hygeiology, the multifarious divisions of which might, I think, be studied on a more systematic method than that usually adopted by sanitary teachers; for instance, according to Michel Levy's classification into *circumfusa*, *ingesta*, *excreta*, *applicata*, *percepta*, and *gesta*.

A logical order of study need not interfere with the separate practical treatment of each public or social question. Lectures and class examinations should be followed up by experimental work, and very profitably by systematic personal inspection of things and places, with written reports or essays to be submitted for tutorial examination and correction. All this should be accompanied by the study, to some extent, of the older standard writers on health and epidemics, foreign and English, and, more thoroughly, of the best modern treatises, those especially of Dr. Parkes, Dr. Gairdner, and Dr. Mapother. On each topic the student should consult the ponderous, yet most useful and convenient, dictionaries of Tardieu. He should also be expected to read certain excellent monographs.

No works of reference, no single treatises, are of greater value to the student than the admirable series of Reports of the Medical Officer of Privy Council, with the special

inquiries of his Inspectors, who are yearly contributing most valuable additions to Hygeiology and Pathology.

Of scarcely less importance is the study of vital and sanitary Statistics,—the right application of numbers to correctly observed and reported phenomena of life, disease, and death. Dr. Farr's commentaries on the alleged causes of death, as set forth in the periodical reports of the Registrar General, take first rank among the classics of sanitary literature, and should form part of the student's work. [These statistical reports will improve. The Medical Officer of Registration, whom Dr. Farr wishes to be appointed in every district—if he be ultimately educated and examined in State Medicine—would prove the very best local superintendent of the system, and would make these national records of the causes of sickness and mortality thoroughly reliable, and establish with something like certainty the conclusions to be drawn from them.]

The Registers of Scotland and Ireland also, as illustrated respectively by Dr. Stark and Dr. Burke, will be found, in process of time, of proportionate educational value.

The student should be required to take up selected portions of the works above mentioned for the final examinations,—at least some of them for the “pass,”—all, I think, for “honours.”

Here, then, is an amount of work which undoubtedly ought to be prepared by those students who aim at proficiency or distinction in State Medicine, but which cannot possibly be crammed, even by the most approved arts and modes of cramming, into the quadrennium, now very properly required of every candidate for the licence to practise.

Any attempt to enforce upon the whole embryo profession such a curriculum of study and standard of acquirements, as ought to be considered indispensable for the exercise of the more important functions of Public Medicine, will certainly fail. It ought to fail, because it would tend to inflict

irreparable damage on this department of education and practice, and to lower the professors thereof in public confidence.

Several plans and suggestions on the subject are now before us, and cannot fairly be left unnoticed.

Everything which comes from Dr. Parkes deserves the most respectful consideration; for no one is more thoroughly and practically conversant with his topics. Therefore I hesitate, notwithstanding my strong convictions, to express an opinion at variance with that part of his recently-published Scheme of Medical Tuition which concerns my subject. Yet, I am bound to say, after much thought on his able exposition, that the proposal to bring nearly the whole work on these subjects into the fourth Summer Session, seems to me fallacious if not impracticable; and the more clearly so, because this last four months of Medical Education, is to include all the purely *Therapeutical* instruction of the course, as well as attendance on Midwifery cases.

Well may the learned author say of his own project, that the last Summer Session would be "the hardest of all." Too hard, I may add, for any average student; especially hard, in its results, upon the public.

I could not have been furnished with a more cogent argument than that with which my friend has favoured me, in support of my proposal to extend the period of study beyond the quadrennium, in the case of candidates for a qualification in State Medicine.

The special information (I can hardly call it knowledge) to be obtained in one Summer Session must be very elementary and superficial; or, if fuller and more advanced, it must be mentally imbibed in such haste as to prevent anything like healthy digestion of the mass. Pity for the stuffed student might be out of place. My compassion is reserved for those unfortunate administrative bodies which

might, under such a system, be deluded into the belief that they were appointing thoroughly-qualified persons as officers of health; perhaps, also, for those judges, lawyer-coroners, and juries, who might fancy that they had summoned real experts to help them over some knotty points of science.

Yet I am bound to say that instruction in toxicological chemistry, physics, and physiology in its relations to "diet, development and growth, mental and moral manifestations" (given to some extent at present in most medical schools, and to be given very profitably on Dr. Parkes's plan) would make the subsequent study of Hygeiology and Medical Jurisprudence far less difficult and more profitable. Were it possible, which I doubt, to enforce such a scheme of tuition as he recommends for the first two years, this would seem to be one of the best methods of commencing medical education, without reference to the future object and destination of the student.

Zoology and Comparative Anatomy and Physiology ought, however, to form a part of the "Science" course, and to be included in the examinations held at the end of the first period of medical education, for those who intend to study for the qualification in State-Medicine.

Under existing circumstances and methods, however, every available portion of the quadrennium is actually appropriated, whether judiciously or not, by other indispensable pursuits. There is, therefore, neither in theory nor in practice, any sufficient period available for really effective work in the several departments of State Medicine.

But supposing that the Medical Council should see fit (as I believe they will ultimately) to insist upon a supplementary period, to be employed in special preparation for the duties of Public Medicine, they are by no means called on to dictate the precise method and order in which the matters, to be included in this additional qualification, shall be pursued. So far at least as concerns this higher branch

of medical education, I support fully the principle which has been laid down, very boldly of late, by another great authority. It seems to me that, provided the candidate (at the end of a period sufficient for the complete and healthy assimilation of the mental *ingesta*, and under a sufficiently-minute, prolonged, and practical examination) shews himself to be thoroughly competent to undertake *any* public or forensic duties which his country may require of him, the manner and place in which the requisite knowledge may be acquired are immaterial. He may get it at home or abroad, or partly in practice among the poor, or partly in the laboratories and museums of great medical schools and universities, or partly in scientific or topographical explorations.

The proper study of the specialities of State Medicine might, nevertheless, be promoted, with great advantage to the country, were the legislature to sanction the endowment of two or three public professorships in each metropolis. Such a measure might have the good effect of checking the tendency to multiply ill-paid lectureships at small Medical Schools, especially on subjects which can be well taught only by those who have at command ample educational resources, and can thus secure large classes. Let us hope that, in the next Parliament, no statesman would oppose such a proposition, on the ground taken by the Tory party in 1806, when the Whigs endowed the Chair of Medical Jurisprudence in the University of Edinburgh.*

What has really to be considered thoughtfully, is the nature of the Board or Boards by which this knowledge should be tested and its possession certified; and *how* competency, proficiency, and excellence are to be marked for the information of public authorities.

On this important point we are first arrested by the recent

* See "Essays on State Medicine," p. 67.

Act of the Senate of the University of Cambridge, confirming the Report of the Board of Medical Studies, and recognizing State Medicine as one of the subjects for the M.D. degree. A general principle of the utmost importance is publicly announced in that Report—a principle already practically, though I think imperfectly, at work in other universities—namely, that the higher medical degree, especially that which signifies attainments of greater importance to the public, should be obtained “by further and somewhat higher tests of qualification,” and should thus “entitle the Doctor of Medicine to be considered as holding legitimately and substantially a position in the profession superior to that of the Bachelor of Medicine.” These higher tests, at Cambridge, are now to include four topics, of which State Medicine is one. The candidate may select this subject for his thesis and his extempore essay. I infer that, if successful, he may be distinguished accordingly, and he will, in fact, be known to the world as having obtained his degree on proof of his thorough knowledge of some or all branches of this subject. All that seems to be required in order to complete this excellent measure, is the adoption of some distinct designation, or the grant of some special certificate, for the use of the legislature, the Medical Register, public administrative bodies, and courts of law.

I am happy to perceive that, at Oxford also, this question is being, in my humble opinion, most ably and judiciously handled. Among the recommendations contained in the second Memorandum of the Medical Education Committee of Hebdomadal Council, appear the following, which I am kindly permitted to quote :

“IV.—At any time after two years from the B.M.
 “degree, he should read and publish a dissertation
 “on one or more of the following subjects,—the sub-
 “jects being selected by the candidate, and the thesis
 “and dissertation approved by the professor. viz. :

“ Practical Medicine, including Mental Pathology.

“ State Medicine.

“ Surgery.

“ V.—The dissertation having been read and published at the same time, the Bachelor in Medicine should become Doctor, in Medicine or in State Medicine, or Master in Surgery, or any combination thereof; provided always that in respect of State Medicine, such examination be passed, over and above the dissertation, as shall be approved by the Medical Council, and agreed to by the University. . .”

It is further suggested that the University “ take steps to obtain from Government the power to insert a diploma in State Medicine and in Surgery, in Schedule A of the Medical Act.”

And in the final report of this Committee, “ the establishment of a special licence in Public or State Medicine ” is recommended, “ if no combined arrangement appear likely to be attained within a reasonable period.”

In the University of London, as I said on a former occasion,* “ the acquirements demanded for degrees in Science, together with a knowledge of particular subjects—including hygienic and forensic Medicine—required for degrees in Medicine, complete what may be called the state-medicine curriculum of that University.” If any particular topics or branches of State Medicine, on which the public officer ought to be informed, have hitherto been omitted in this curriculum, they can, of course, and probably will, be supplied by a Body which certainly has the honour of having taken the lead in giving distinctness and prominence to qualifications and degrees in *Science*.

But I venture to think that the main defect of the London University regulations, is that all these advanced

* “ A Proposal,” &c., 1865, pp. 5, 6.

scientific acquirements must be ready for the M.B. degree. It appears that nothing further is demanded, as regards special knowledge, for the Doctor's degree. The principle, acknowledged elsewhere, that higher and more definite qualifications are demanded for higher degrees, is, to some extent, lost sight of in these regulations. Neither does it appear that any proof or mark of special proficiency in the studies of which I am treating is conferred on the Bachelor or Doctor of Medicine.

I suggested in 1865, that "the Universities of the Kingdom might afford facilities for the cultivation of State Medicine, as a special department, in connexion with the existing Natural-Science and Medical Schools; and after the requisite examinations, confer corresponding degrees or certificates of proficiency, whereby to mark the fitness of their possessors for official employment."

But I beg to repeat my conviction that certificates of high proficiency in State Medicine should be reserved for those who attain the *highest honours in Medicine* which the University confers.

Those may surely be esteemed the most exalted attainments, the noblest talents, of the Physician, which can be the most widely employed for the benefit of society, which concern most deeply the welfare and safety of the masses of the people, and which tend directly to the physical improvement, indirectly to the greater moral excellence, of the race.

It is this kind of knowledge which deserves the highest social estimation, and which ought to lead to the most honourable positions in the State. Were a principle so truly Christian duly recognized by the nation, physical science and its beneficial application to the condition of the people, would have as influential a share in its government, and would as surely command its highest distinctions, as the successful exercise of profound knowledge of the Law now does.

The beneficial administrator of State Medicine, the preserver of a million lives, the elevator of the standard of a people's health and vigour, ought not to yield in the councils of the realm to the most distinguished practitioner of the destructive art of war.

But to return to the manner of testing or marking proficiency in subjects of State Medicine. Should this be left wholly to the Universities? The question need scarcely be asked; for if the legislature made no further provision in the matter, the other licensing bodies, in the race of competition, would almost certainly provide examinations and offer certificates, professedly of the same nature and intent, for the use of administrative bodies. Thus, Colleges of Physicians, Colleges of Surgeons, and Societies of Apothecaries, would compete or combine to supply the new article, the manufacture of which might otherwise be monopolized by the Universities!

There is one, and but one, method that I see, to prevent so absurd and objectionable an addition to the medley of existing qualifications, already fifty-two in number. That method has been suggested; namely, that Parliament should establish in London, in Edinburgh, and in Dublin, a Board of Examination for the Civil Medical Service.

I do not mean that the examinations held, and the certificates or diplomas granted by such a Board, should in any case be permitted to supersede the examinations held at the age of twenty-one, for the licence granted by any one or any combination of the licensing bodies. It is quite unnecessary, as it would be inexpedient, to complicate the state-medicine question by dragging into the discussion that of medical licences in general. The latter must be treated on its own merits; and doubtless it will some day be settled on broad and national principles. A qualification or a degree does not essentially comprehend, and it need not absolutely confer, a licence to practise. But, in the matter of State

Medicine, the certificate of the proposed Board would be supplementary to that uniform minimum qualification which now includes the licence to practise, just as the degree of Doctor of Medicine generally supplements that of Bachelor.

The foundation of scientific medicine is now acknowledged to be one and indivisible. Its breadth and depth may vary somewhat in different schools and universities, and for different classes of the profession. But it should admit of any superstructure which the advance of knowledge and the requirements of the public may reasonably call for.

The primary object, therefore, of an Examining Board for the Civil Medical Service is obvious. It would admit to examination candidates for its diploma or certificate, who, after having fulfilled their quadrennium, and passed their examination for the licence to practise, shall have devoted *two* more years to the attainment of higher and more special knowledge. The examiners would test these acquirements, and, if satisfied, would certify the competency or the proficiency of the candidate in subjects deemed essential for the efficient action of the medical officer, the sanitary superintendent, and the practitioner of medical jurisprudence. They would also grant "honours" to those who had distinguished themselves in the examination.

A secondary object of the institution of such a Board might be to test, as the Army and Navy Medical Board have so well tested, the real value of the diplomas previously conferred by the existing Licensing Bodies.

The institution of such a Board, it may be as well to repeat, need not be the means of depriving the professional Corporations of a single applicant for their diplomas; while they would thereby be advantageously relieved from duties and responsibilities, for which at least some of them were not originally intended or founded. They would thus be enabled to devote all their energies to the promotion of excellence in their respective departments of therapeutic

practice, an object which, notwithstanding theoretical objections to their constitution and privileges, they have long pursued with much success, with honour to themselves, and benefit to the public.

For what offices, or for what public employments, the Certificate of a Civil Medical Service Board should be required, is, I submit, a matter for the legislature to consider and determine, and hardly within the province of the Medical Council, unless indeed the question were remitted to them by the Government.

It is enough that those who may be consulted by the State authorities, should be prepared to shew—*how* the public might be best served, in matters of public medicine, by those persons who would be, under the regulations of the Medical Council, thoroughly and adequately prepared for such duties; *what* kind of degree or certificate should be required for medical offices under administrative bodies and in legal investigations; *what* additional period of study and observation should be required for the attainment of such qualifications; and *what* description of Examining Board ought to be constituted for the purpose of conferring the same, in defect of the possession of a corresponding University degree.

Under a perfect system of public medicine, I believe that no one ought to be appointed to the medical charge of the Poor in any district until he had attained, by a "pass" examination, the proposed qualification in State Medicine. Under the Irish Poor Law, no one can now be appointed to a Dispensary district, under the age of twenty-three. This is the age at which I propose that the state-medicine diploma might be obtained. The candidate might, during his preparation for the higher degree, be engaged in attending, as a deputy, upon the sick and hurt in a workhouse or district, if he were not engaged in clinical and practical work in some hospital or public institution.

Were the Poor-Law Medical Staff constituted of men thus fully qualified, they would justly be entitled to preference in appointments to the proposed higher sanitary and medico-legal offices. Good service and marked success in the lower office would constitute their legitimate claim to fill vacancies in the higher.

Although I have avoided, as much as possible, any suggestions concerning the administration of State Medicine, it is but right to say that nothing is further from my object than to disturb existing tenure of office, or to interfere with the personal rights and interests of those Officers of Health, Certifying Surgeons and Public Analysts, who are at present so usefully employed in the Metropolis and other parts of the Kingdom.

It only remains for me to reiterate, what has been already plainly indicated, that the possession of the degree of Doctor of State Medicine, or any similar distinction, or simply that of Doctor of Medicine—provided it were accompanied by a special certificate, attesting proficiency in State Medicine—ought to exempt the candidate for public office from the necessity for examination by the proposed Examining Board of the Civil Medical Service.
